

Ergonomics {Greek: ergon (work) + nomos (law)} focuses on the study of work performance with a stress on workers safety and productivity.

Chapanis (1991) used the term ergonomics and human factors interchangeably. He proposed that "Human factors (ergonomics) is a body of knowledge about human abilities, human relations and other human characteristics. Human factors engineering is the application of human factors information to the designing of tools, mechanics, systems, tasks, jobs and environment for safe, comfortable and effective human use".

In ergonomics, certain basic principles are considered for designing the exercise or work. This takes account of human physical and cognitive needs.

i. The person should maintain an upright and forward facing posture during work.

ii. If the task is to visualise something, the person must be able to visualise with the head and trunk upright or with just the head inclined slightly forward.

iii. All the activities should permit him to adopt several different but equally healthy and safe postures without any reduction in the capabilities to do the work.

iv. The work should be arranged in such a way that it is done at the workers choice i.e., either sitting or standing. In sitting position, he should use the back rest of the chair.

v. When standing, the weight of the body should be equally carried out on both feet.



vi. Any activity should be performed with the joints at about midpoint of their range of motion, particularly in the head, trunk and upper limbs.

vii. Where a muscular force is to be exerted, only the largest, appropriate muscle group available should do it in a direction collinear with the limbs, which are in concern.

viii. Any work at or above the level of heart should not be performed, not even

occasionally. If light hand work is a must to be performed, it should be performed with proper arm rest.

ix. If a force has to be exerted repeatedly, it should be done with either of hands (arms) or either of the legs, i.e., it should not be done in such a way that only one limb is working.

x. After some loads (environmental and informational) at work, rest should be allowed.